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SPECIFICATIONS AND RESEARCH DESIGNS  
THE CATOCTIN FURNACE ARCHAEOLOGICAL MITIGATION PROJECT  
U.S. ROUTE 15 FROM PUTMAN ROAD TO ROUTE 77

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Project Director 16  
Orr & Son, Consulting Archaeologists 38

July 12, 1979  
Thurmont, Md.

Prepared for the State Highway Administration  
Baltimore, Md.

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ADDENDUM TO RESEARCH DESIGN OF DR. ORR

1. Page 3, 7th paragraph add:

Field Time - Write Up Time

Field Time for each site is given in this report.  
Write Up Time is equal to Field Time. e.g. 10 days  
Field Time = 10 days Write Up Time (cost proposal,  
March, 1977).

2. Page 8, bottom of page, add:

Field Time; 30 days with additional 10 days  
contingent on discovery of forage site.

3. Page 12, end of paragraph 3' add:

(Check 5) Field Time: 5 days

4. Page 14, end of paragraph 5, add:

(Check 6) Field Time: 25 days

5. Page 16, end of paragraph 1, add:

(Check 7) Field Time: 7 days

6. Page 16, end of paragraph 3, add:

(Check 16) Field Time: 4 days

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## INTRODUCTION

This report is on the how and why of the excavations to be undertaken by the Catoclin Furnace Archaeological Mitigation Project written at the request of the State Highway Administration to meet archaeological compliances in the dualization of U.S. Route 15 construction between Putman Road and Maryland Route 77. The report seeks to answer questions raised by the Advisory Council on Historic Preservation and the Interagency Archaeological Services organization of the Department of Interior about the "Technical Proposal" which states the general objectives and procedures (Orr and Son, March 1979). Specifically the inquiry centered around the need for more details with which to evaluate the proposed archaeological effort.

A meeting was held by the three archaeological investigators (Orr, Townsend, Thomas) with the State Archaeologist and his assistant (Bastian, Curry). The meeting took place at the Catoclin site where each investigator visited the sites they would work on (Townsend and Thomas for the first time for this purpose) in order to come up with the details of the blueprint, the outlines of which were given in the "Technical Proposal". The research designs for excavating and analysing the thirteen, highly varied sites, forms the bulk of this report. Supplementary information on processes of data gathering in the field, the artifact handling in the laboratory, as well as the roles of outside specialists will be presented first as an aid in understanding the full ramifications of the research designs. The specifications and standardizations presented represent agreements reached by the three firms and the State Archaeologist as to necessary and desired procedures to follow in carrying out the dig.

## SPECIFICATIONS AND OUTSIDE SPECIALISTS

Grids. Grids, used to locate finds in three dimensional space, will consist of 5x5' units for excavating purposes. Flexible units may be used for testing, locating units, etc. It is suggested that an attempt be made to locate the area for investigation in the northeast quadrant of the grid, the coordinates of which would be North (grid north) and East. Squares are identified by the stake of the southwest corner. The two coordinates proceed at right angles from a North 0, East 0 stake by 5 foot intervals. The southwest and identifying stake of a square located 3 squares up the north coordinate and 3 squares to the right on the east coordinate would be North 10, East 10.

Datum Plane. A datum plane in which all finds are below it will be established for each grid with a leveling instrument from an established station. Artifacts and features may be located in terms of the surface level (i.e. below surface) only if the elevations of the surface point is known below the datum plane.

Layers. Archaeological strata (cultural and natural) will be known as layers. They will be denoted as Layer 1, 2, 3, etc.

Features. Archaeological features are similarly numbered: Feature 1, 2, 3, etc.

Site designations: Maryland archaeological site survey numbers are assigned by the Division of Archaeology. They are 18 FR 320 to 18 FR 332 given below for each site. The State inventory number should be referred in reports, cataloging, etc. Check designations may be used for ready reference in addition.

Units of measure. Feet and inches.

Data forms. The following forms will be provided by the Maryland Division of Archaeology, Geological Survey: specimen catalog, feature form, inventory form for check-listing features, burials, photographs, artifacts, etc., excavation unit report, burial addendum to feature form, photographic record, photographic print file. (Appendix A)

Sack unit for artifacts. This may be a heavy paper bag (plastic inner bag suggested), or cloth bag. It should be labeled in black felt tip ink.

Daily logs. Will be kept by each supervisor.

Invoices with report of progress will be submitted to the director every two weeks who will submit them within a day or 2 to the SHA for reimbursement. The invoices should be made to the director who will be pay by the SHA on approval of the expenditures.

Maps. The Catoctin area 2 foot contour 1"=50' and 1"=200' maps, available at the Division of Archaeology, will be the official site maps. Ground plans and profiles will be made as a matter of record of all excavated areas.

Advisory Committee. An advisory committee of 4 men selected by the State Archaeologist, who will also serve will periodically review the progress and make suggestions. Supervisors will be requested to attend this meeting and to impliment the suggestions of the committee.

Supplies. Other than those mentioned supplied by the Division of Archaeology all other supplies (artifact bags, photo supplies, artifact cleaning equipment, etc.) will be supplied by the individual teams.

Screens. ordinarily  $\frac{1}{4}$ " screens will be used for sifting artifact-bearing soils.

Photographs. Each team will do its own photographing. The project photographer Ron Houghton will take special pictures and artifact shots for the final publication.  $2\frac{1}{4}$  x  $2\frac{1}{4}$  negatives are required for B/W. Color shots (slides) should be shot as duplicates and also used for bull-session analyses.

Monitoring of Buried Sites. The Advisory Council on Historic Preservation and others are interested in the effect of roads on buried sites. If sites present a test situation where part of the site will be under a road, and part of the same strata will not, this should be brought to the attention of the Director as a possible "monitoring test" to be recorded as such with the State Archaeologist. Other test situations may develop.

Oral History. Team leaders are encouraged to talk with reliable witnesses as to the oral history of the feature they are investigating. The present oral histories (see Orr and Orr, 1977) need checking and expanding. Such data when skillfully acquired and applied can greatly assist in reviving past phases of culture and in contributing to a vital sense of culture history for the Catoctin area. The Catoctin Furnace Historical Society has promised help in this regard.

The Lab. The field lab and residence of Ron and Rita Orr, who will act as custodians of the collection, is at 115 West Main St. Thurmont, Md. Each team will be assigned a washing, analysis and storage area for their finds. They will perform these duties for their team finds on official time. Ordinarily, the teams will knock-

off work early to wash, catalogue and study the finds. Each team will provide its own washing equipment. Cardboard trays, available at liquor store and markets, (with low sides) can be collected by each team. Washing will ordinarily take place outside under a large tree in the backyard. Tables and chairs will be provided. A table and adequate space will be provided each team on the second floor for spreading out finds and preliminary analysis. Catalogue numbers will be assigned by the director (blocks of numbers). Each site will have its own field catalogue.

Curation of Artifacts. Sturdy artifacts such as recent glass, ceramics, metals may be washed to remove dirt coating hiding their identification. Old glass, early ceramics (e.g. delft ware) should not be washed, but clumps of earth carefully removed. Special drying problems exist for wet wood artifacts, old iron, and wet organic matter. Mrs. Dietz, Smithsonian Institution conservator, will advise us on the methods to use. Mrs. Dietz indicated that first aid will be applied to fragile finds. However, the bulk of the old metal and wood artifacts require long time treatments which can only be started in a field lab. All artifacts will go to the State Archaeologists lab where a conservator will take over their treatment. For example: old metals require distilled water treatment to soak out the corroding salts. This treatment takes a long time under controlled conditions and requires a stabilized lab such as at the Division of Archaeology. Mrs. Dietz will advise on the first aid and permanent treatment on each group of artifacts coming from the same environment. In addition to the conservators services for visits a stipend of \$800 has been allowed for the lab. The rent and utilities are also provided.

(Note other directives in "Technical Proposal")

#### Outside Specialists

Geologist. Dr. John L. Fauth, SUNY/Cortland, will identify the geological materials and strata encountered in the excavations. First and foremost is the iron ore. Dr. Fauths expertise is required to identify iron mine strata. He is an expert on iron mines and is currently phrasing, with Catoctin borings and excavated data, a theory as to the origins of the iron deposits used in Catoctin furnace. Limestone outcrops are similarly a specialty of Dr. Fauth and the problems of the quarrying and uses of the limestone require his consultation. For example, he was able to identify several potential sources of limestone as too impure to be of use as flux in the blast furnaces. I am working with him on the basic problem of identifying the relationship of the Catoctin society to its natural environment including the geological (mineralogical) and how the changing availability of iron eventually (with other factors) meant the end of the industry in this locality. Dr. Fauth's help is also indispensable in analysing the borings of the racepond site for evidence of iron ore (was it originally an iron mine) and clay washings from iron ore (was it an ore washer?)

Botanist. A botanist from SUNY/Cortland recommended by Dr. Fauth will likely be the project Botanist. Five days of analysis of borings from the race pond and Auburn Dam mucks may give a profile of quantity and type of spores in the air, hence trees on the mountain during the 130 years of its existence. This data not only will be useful in assessing the question of whether the charcoal supply was threatened at any point, but also may provide useful in answering the question of the chronology of the two ponds. Is the Auburn pond older than the Little Hunting Creek racepond?

Conservator. Mrs. Dietz's valuable services have been described above. We are hoping for a definitive study of the best methods of curation for industrial artifacts of the iron industry during the time span represented at Catoclin. These data should be of great value to the State Archaeologist in assisting him with the problem of storing these difficult artifacts.

Physical Anthropologist. Dr. Lawrence Angel, Curator of Physical Anthropology, the Smithsonian Institution will study the morphology, demography, and perhaps bone diseases of early Americans. He is hoping to be able to keep the bones as a permanent study collection. The skeletal material from Check 6, burial ground, will be sent to the Smithsonian for study as indicated below in Ron Thomas's research design for that site.

Archivist: Edward Heite, Delaware State Archivist, and authority on Furnace culture will act as the project consultant on the cultural meaning of the findings. His analysis of the sponge iron and sprues or gates, the waste iron at the entrance of molds helped identify Feature 1 at Check 3 as a probable foundry. Not only artifact identification but also the whole plenopoly of iron making technology requires our interpretation with the help of Mr. Heite. He is available for 15 days.

Photographer. Ron Houghton, professional photographer, will lend his expertise in preparing the final publication photos. He will take special interpretive photos of archaeological features intended to bring out special features of interpretation often overlooked in "record" shots. He will also prepare the plates on artifacts for final presentation from the same standpoint. He will work for 8 days. Ron has also shown an interest in the interviewees, the descendants of the miners and heirs to their oral history. He would like to include some photos of them at work with the excavating teams in revitalizing the past.

Ceramist. Ms. Betty Cosans, Philadelphia, will analyse the ceramic material found from all sites thereby providing key data for chronological alignments. The analysis will take place at her laboratory. Two field visits are planned. Ms. Cosans's services are already extensively used by the John Milner and Mid-Atlantic firms.



A Research Design for  
the Archeological Investigation of  
a Possible Forge and Foundry Site (Check 3)  
at Catoclin Furnace  
Cunningham Falls State Park,  
Maryland  
(18 FR 320)

submitted by

John Milner Associates  
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CHECK 3 (JOHN MILNER ASSOCIATES)  
**Research Design**  
(18 FR 320)

A detailed Research Design for the archeological investigation of what is thought to be the location of the earliest forge and, possibly, foundry at Catoctin Ironworks is presented in the following paragraphs. This submission is intended to allow a review of the proposed research by members of the Advisory Council for Historic Preservation, Interagency Archeological Services, and other interested parties. The following discussion is divided into statements of project objectives and proposed methods of investigation.

Project Objectives

The investigation of the probable forge and foundry site is intended to recover information relevant to the satisfaction of the following set of research objectives.

1. Determine the exact location and configuration of any remains of industrial structures, if present.
2. Determine the function of any structural features encountered (it should not be simply assumed that any remains are those of a forge or foundry).
3. Determine the means of construction of the stone dam and the basin which it encloses.
4. Determine the specifics of the use of waterpower and, insofar as possible, other technological aspects of iron production at the conjectured foundry and forge.

The pursuit of these objectives is expected to contribute to the present understanding of the technological and physical evolution of Catoctin Furnace. Information recovered during the proposed investigation should also prove of value to the understanding of eighteenth century Maryland iron manufacturing technology.

Methods of Field Investigation (Fig. 1)

Field Investigation will involve the use of both mechanical and hand excavation techniques, each type of excavation employed for specific purposes.

1. Backhoe Excavation:

Investigation of the site will begin with the excavation of two elongated trenches, crossing at right angles and centered upon the area thought (on the basis of test excavations) to be the possible location of remains of a foundry. Minimum trench width will be two feet. The backhoe, however, will be used only for removal of overburden. Deposits yielding information relating to early industrial activity will be removed with hand excavation techniques. It is anticipated that use of a backhoe in this manner will greatly facilitate the determination of the exact location and extent of structural remains at the site.

Additionally, it is proposed that a backhoe be employed to remove a heavy

deposit of slag overburden from the suspected forge location, a deposit shown by test excavations to exceed eight feet in depth. The backhoe will be used to extend one of the initial trenches described above such that it yields a continuous profile from the suspected foundry area to that of the forge. The depth of the slag deposit in this latter area requires a much wider excavation, however, with six feet being a minimum recommended width. Again, the backhoe will be used only for the removal of overburden. It is anticipated that the use of a backhoe in this manner will expedite the initial location and definition of any remains of a forge in this area, as well as provide an accurate measure of historic grade which has been obscured by the construction of Route 806.

Further, it is proposed that a backhoe be used to remove overburden from the area within and in front of the rectangular niche set into the east face of the dam wall. It is hoped that excavation in this area will yield evidence of a water control system, possibly in the form of support posts for a wooden flume which would have carried water from the dam to a wheel.

Finally, in order to recover information concerning the construction of the dam, it will be necessary to record cross sections of its south and east walls. In the event that significant amounts of overburden exist in the selected locations, the use of a backhoe may again prove valuable.

## 2. Hand Excavation:

Aside from the careful excavation of historic deposits in the trenches described above, it is proposed that a minimum of fifteen five-foot squares be excavated within the area of the suspected foundry. These units will be excavated with shovel and trowel, as appropriate, and located in reference to a site grid. It is estimated that fifteen five-foot squares will represent approximately a five percent sample of the suspected foundry site. This sample should allow an interpretation of the nature of iron working activities on the site, and should yield important information bearing upon eighteenth century industrial technology.

It is intended that all historic deposits be passed through one-quarter inch mesh screens in order to maximize data recovery. Those deposits which are the results of recent filling or which prove to be sterile of artifactual material, however, will not be screened.

The grid which will be employed will be comprised of five-foot units and will be of a type which is infinitely expandable in any direction. The designation for any single unit will be the distance and direction of its southwest corner from a point designated North zero East zero (or NOEO) and serving as a grid reference. Thus, a square having as its southwest corner a point lying twenty-five feet north and fifteen feet east of NOEO would be designated N25E15. Permanent datum markers will be established for the site, located outside the area of highway impact.

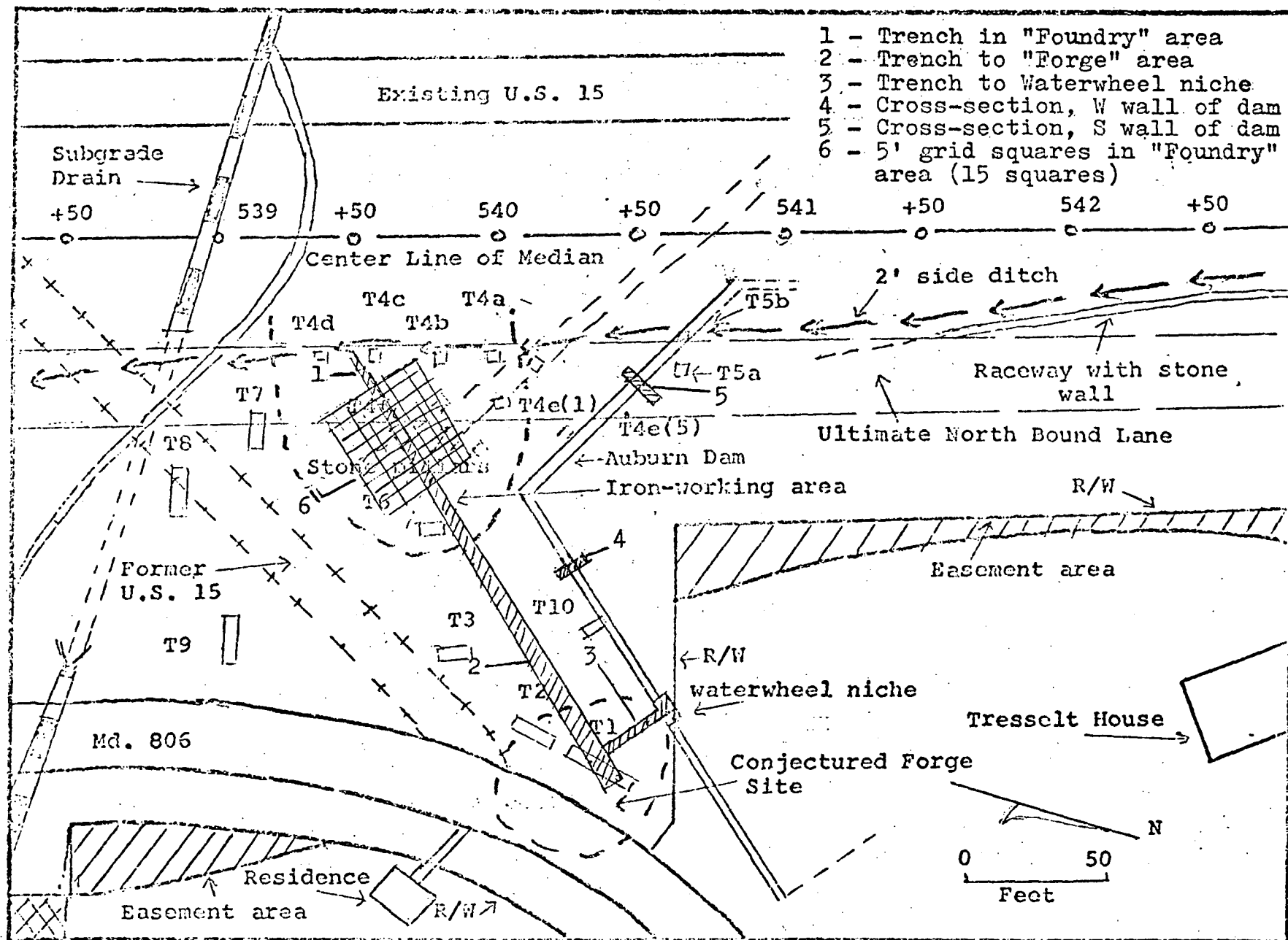


Fig. 1 . Check 3 with Proposed Excavation Plan.

A Research Design for  
The Archaeological Investigation of  
A "Slave" Cemetery (Check 6)  
A Miner's House (Check 7)  
An Ore Mine Road and Railroad (Check 16)  
An Amerindian Site (Check 5)  
At the Catoctin Furnace Site, U.S. Route 15  
Between Putman Road and Route 77  
Thurmont, Maryland

Submitted by

Midatlantic Archaeological Research  
P.O. Box 676  
Newark, Del. 19711

CHECKS 5, 6, 7, 16  
(MID-ATLANTIC ARCHAEOLOGICAL RESEARCH)  
RESEARCH DESIGN

Introduction

The following research design methodology is intended to supplement the overall program for Catoctin Furnace submitted by Dr. Kenneth Orr, Principal Investigator. Methodology was developed to meet the needs of four sub-projects to be conducted by the staff of Mid-Atlantic Archaeological Research, Inc., under the direction of Dr. Orr. Work will be initiated at four sites or "checks" and will be conducted by three teams from the MAAR staff.

Field supervision will be provided by the following persons, all of whom will work under the general guidance of Ronald A. Thomas, Project Director for the MAAR involvement.

Check 5: Aboriginal Site - Supervised by Glen S. Mellin

Check 6: "Slave" Cemetery - Supervised by Ms. Sharon Burnston

Check 7: Miners House - Supervised by Mr. John McCarthy

Check 16: Quarry Road and Railroad - Supervised by Glen S. Mellin

Schedule

Each team will work on a different schedule. It is planned to have some MAAR staff members in the field within a week after the project is authorized and various members of the project staff will be on site throughout most of the summer. All field work is to be completed by the end of August with analysis and report preparation to take much longer.

Team 1, the group working on Check 5, will enter the field three weeks after the beginning of the field work. They will remain on site for the duration of the project, returning later to conduct field work on Check 16.

Team 2, those members of the staff working on the "slave" cemetery (Check 6) will work a split schedule. Two members will spend two weeks in the field directing clearing operations, mapping grave locations and supervising the removal of overburden by the mechanized equipment and operator. Following the completion of identification and mapping the team will return to the laboratory to evaluate the work. A full crew will return within a week to initiate the grave excavations and will remain in the field for the duration of the project.

Team 3, the team working on Check 7, will spend two weeks in the field contemporary with Team 1. They will remain till the completion of the field investigations.

Check 5: Aboriginal Campsite (18 FR 322) (Fig. 2)

This identified Archaic site is situated in the lawn, garden and wooded land of a local resident (Renner) who has collected artifacts for over thirty years. Interviews with Mr. Renner have suggested that a wide variety of early to late Archaic projectile points exist on the site. Mr. Renner's collection has been photographed and recorded and will serve as a starting point for the proposed investigation.

The following procedure is to be used. A grid system will be imposed over that portion of the site reported to contain artifacts. At ten foot intervals, the investigating team will excavate a post hole test. Each test will be excavated into subsoil (sterile) and profile drawings will be made. The objective of this procedure is to recover artifactual data which will allow the mapping of any distribution patterns that may have existed within the small site. A distribution map will be drawn and interpretations made from the map. The second phase of the research will consist of the excavation of 5' by 5' units at the locations in which artifacts have been found and which show evidence of subsurface features. This phase will continue until time and funding constraints require its termination.

Methodology includes the excavation of the tests, the inspection of soil deposits, the recording of data, and the analysis and evaluation of the findings. Test units will be dug at stakes set up by transit at ten foot intervals. Each test will be taken down to a depth dictated by the natural depth of cultural bearing strata. Subsoil will be reached and entered in each test. All soil removed from each test hole will be sifted through 1/4" mesh screen. All non-natural material will be retained and placed in marked bags. Photographs will be taken when needed and drawings of each profile and maps of each unit will be retained.

Check 6: "Slave" Cemetery (18 FR 323) (Fig. 6)

Mr. Renner, on whose land this site is situated, led the Principal Investigator to this reported "slave" cemetery and pointed out the location of rough field headstones. Test excavations confirmed the site as a cemetery but did not reveal any information as to the origin of the burials, the age of the cemetery or the overall dimensions and numbers of burials present. The MAAR Check 6 project will attempt to answer these and other questions.

The primary objectives of this project are: 1) to locate, identify, record and remove all burials present within the right-of-way of the proposed U.S. Route 15 improvement project; 2) to record the racial, ethnic, religious and social affiliations of the persons buried in the cemetery; and 3) to determine what social and cultural traits concerning clothing, burial practices, physical characteristics, etc. can be interpreted from grave site investigations.

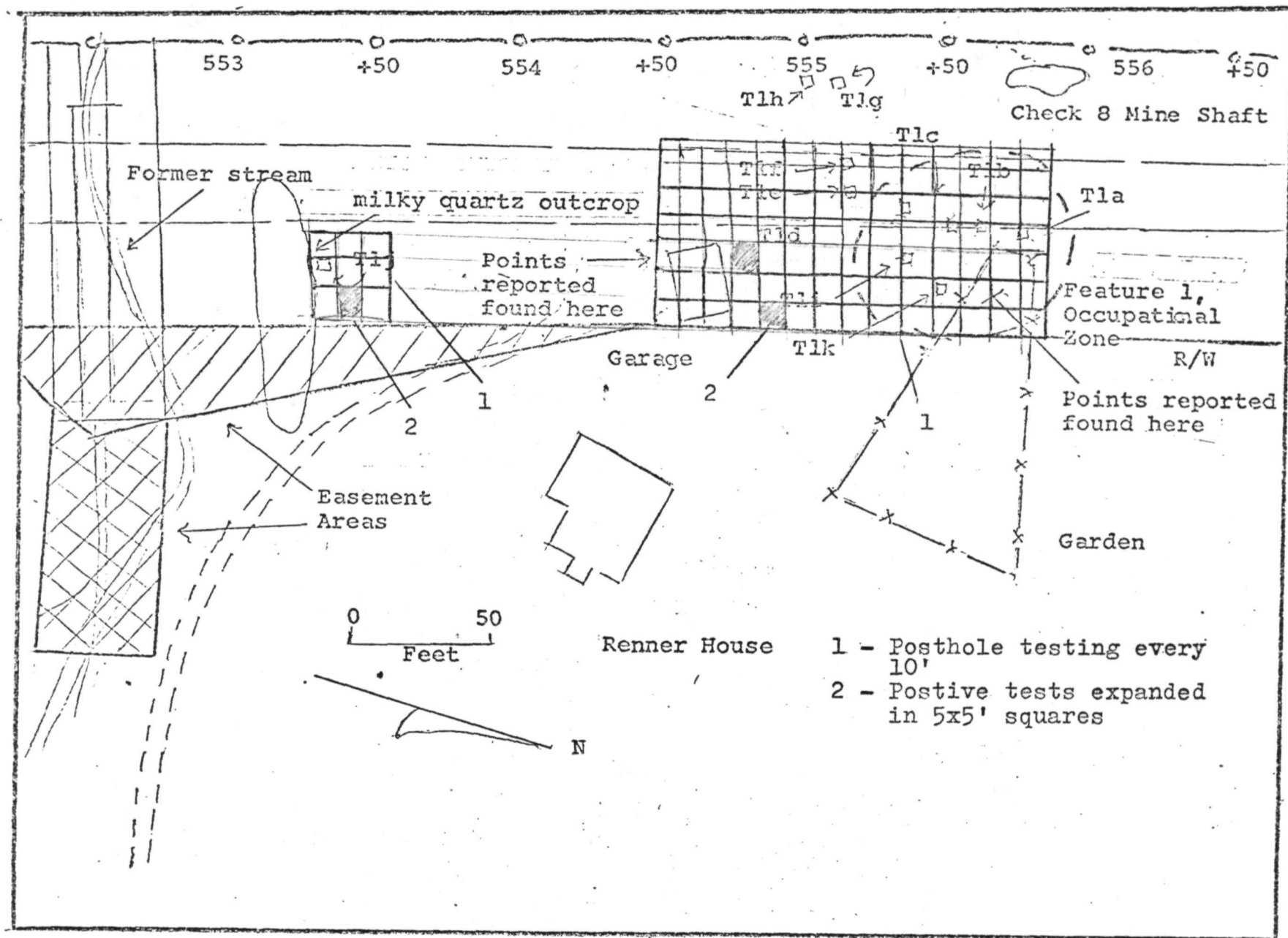


Fig. 2 . Check 5, Amerindian site, with proposed Excavation Plan.



These objectives will be accomplished by following the procedures and methodology given below. The initial procedure will be to remove all vegetation from the project area and to locate precisely all marked graves (those with intact headstones). Following this, all identified headstones will be mapped and removed (to be taken to the laboratory for further analysis). The next step will be to work with mechanized equipment to remove all surface overburden down to the level of undisturbed subsoil. Two members of the MAAR team will be on site to assure that the grid system will not be disturbed and to remove any additional headstones uncovered by the machinery.

After all soil overlying the subsoil has been removed the team will begin to identify and map all graves. Only after the entire area has been thus mapped will any subsurface excavation be conducted. The identified graves will be given numerical designations and divided into natural or artificial groups or strata. Each strata will then be sampled, exact members of the strata to be excavated will be determined by a random sampling technique. The sample percentage excavated will depend upon the total number of graves identified. A sample size of 30 graves is expected to be selected due to time and budget limitations.

Graves selected as members of the representative sample will be carefully exposed down to the top of the burial. This will be done by shovel or other equipment as appropriate. The burial will be excavated by small hand tools and all features noted (artifacts, bones, stains, etc.) will be carefully recorded (drawings, photographs, written observations, etc.). The burial will be removed only after the detailed recording has been accomplished. No burials will be left unfinished at the end of the day unless adequate security measures have been taken.

Bones will be removed, casually cleaned and boxed securely so as to assure a minimum of breakage during shipment to the Smithsonian Institution where they will be studied. All artifacts removed from the graves will be analysed and included in the project report.

The analysis and report will concentrate on cultural traits as noted above. The report from Dr. Lawrence Angel will be included in the Check 6 report and will be used to aid in the interpretation of the cemetery.

#### Check 7: "Cartey House" (18 FR 324) (Fig. 3)

The excavation of this historic site will proceed by mapping, post-hole testing and expansion of test units that locate structural features. The grid mapping will precede any other work and will be used to locate, at ten foot intervals, post hole tests. All artifacts recovered (by sifting) from post holes will be subjected to Symap-type recording and analysis. Features recorded will not be completely excavated but will only be identified for further investigations, if scheduled.

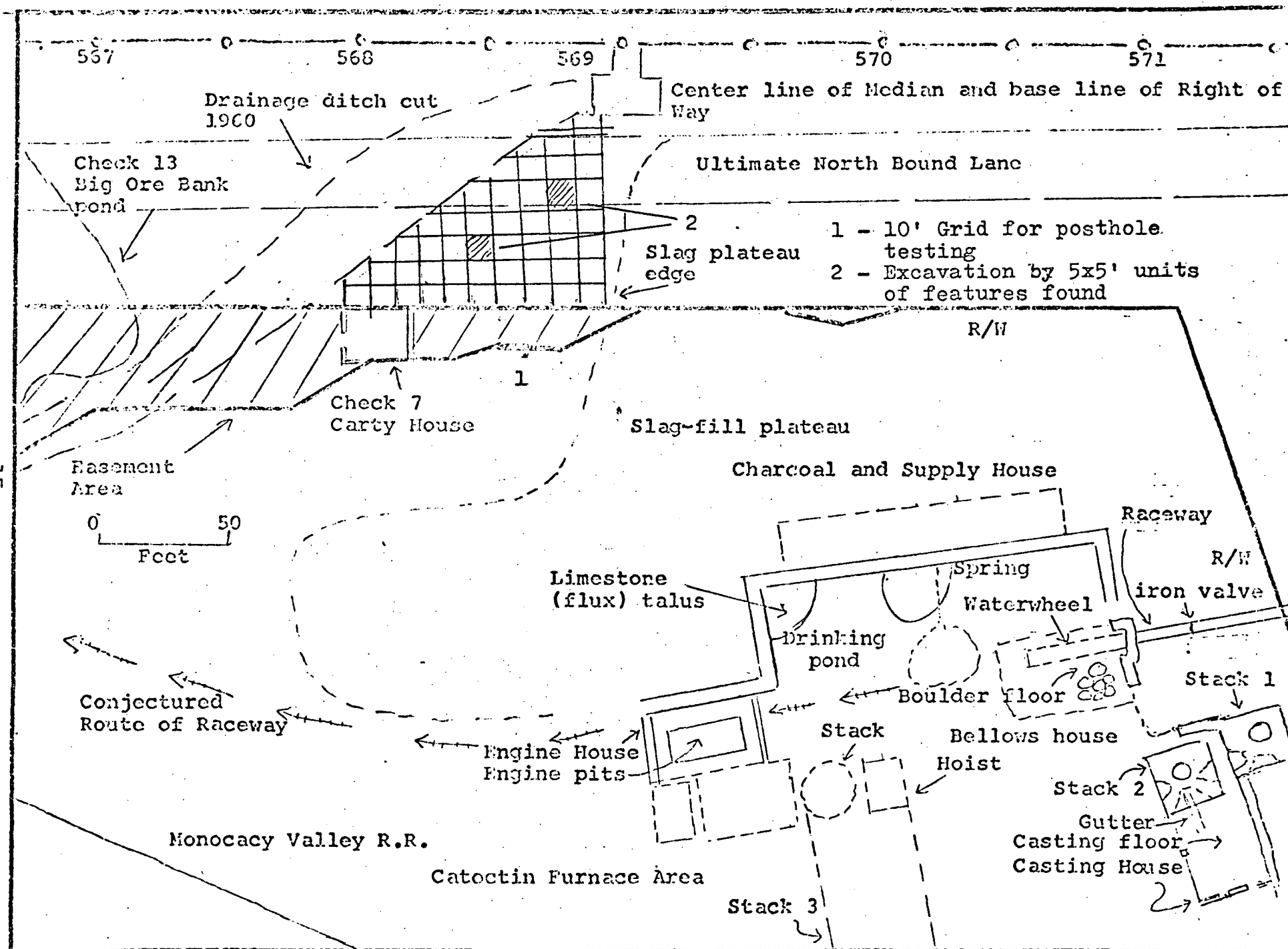


Fig. 3 . Check 7, Carty Miner's House with excavation plan.

All appropriate methods and field techniques used in Checks 5 and 6 will also be used in the investigation of Check 7. Photography will proceed once the subsurface is opened or features are located. Maps will be accurate and will relate the findings to permanent bench marks. The objectives will be to obtain data that allows for the identification of the period of occupancy, the ethnic identity of the occupants and the socio-economic characteristics of workers' homes of the late 19th century.

Check 16: Quarry Features (Fig. 4)

This project will proceed by the opening of several cross trenches in an area in which a quarry railroad and dirt road are thought to have existed during the operation of the Catoclin Furnace Complex. The structural features to be sought include physical evidence of track and/or ties, fill material brought in as a railroad or road bed, and evidence of the vehicles and cargo that used these transportation features.

Excavation will be by hand with flat and round ended shovels used primarily. All artifacts will be retained and any evidence of subsurface features will be carefully recorded.

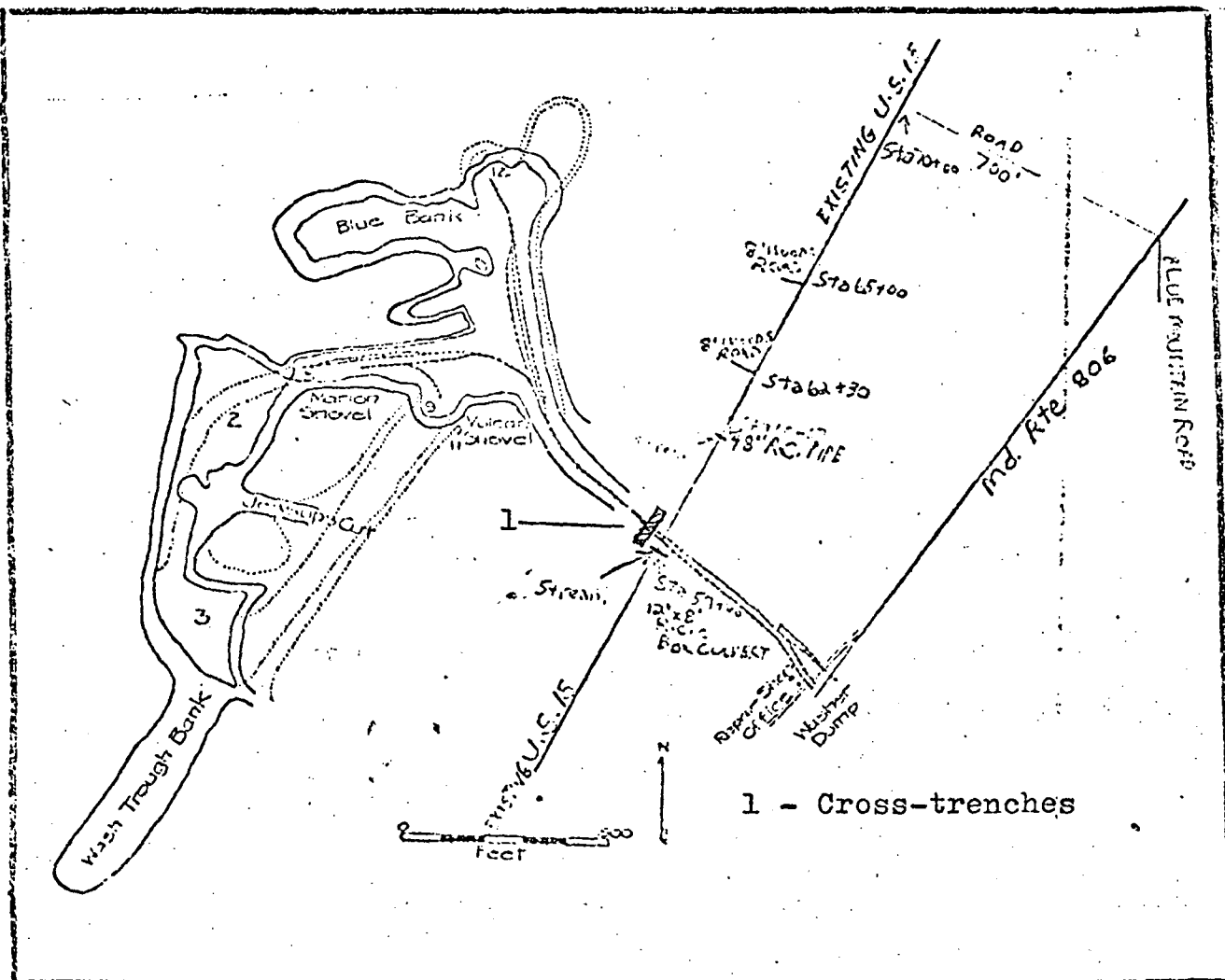


Fig. 4 . Map of Check 16, Fitzhugh-Kunkel Ore Banks, located 1 mile north of Catoclin Furnace (Singewald, 1911 map with overlay by Bureau of Soils and Foundations SHA SHA) and proposed Excavation Plan.

A Research Design for  
The Archaeological Investigation of  
A Bathhouse, Spring, and Raceway Complex (Check 4)  
A Limestone Quarry (Check 9)  
An Exhumed Cemetery (Check 10)  
A Race Pond (Check 11)  
Three Iron Ore Mines and the Charcoal Road (Check 12)  
An Ore Railroad (Check 15)  
A Raceway Segment (Check 17)  
A Limestone Quarry and Kiln (Check 19)  
At the Catoctin Furnace Site, U.S. Route 15  
Between Putman Road and Route 77  
Thurmont, Maryland

Submitted by

Orr and Son  
Archaeological Consultants  
2221 Cowan Boulevard  
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22401

CHECK 4  
BATHHOUSE, SPRING, AND RACEWAY COMPLEX  
(18 FR 321)

Introduction

Objectives. To mitigate the effect of the impact of the dualization of U.S. route 15 on archaeological resources represented by the bathhouse (Feature 1), spring (Feature 2), and raceway complex consisting of water trough (Feature 3), and retaining stone wall (Feature 4). (Orr and Orr, 1977, pp. 18-22) (Fig. 5)

Excavating Force: Six local State Highway Administration laborers, some of whom participated in the intensive survey (1977), 3 members of the Consultant's team. Site supervisor: Dr. Kenneth G. Orr. One SHA backhoe will also be used (1 day). Field time: 9 days.

Bathhouse

Objectives. The bathhouse foundation, 12' square by 3' high, will be completely excavated to provide details on its construction and the artifacts in association. These data should be comprehensive enough to allow a model reconstruction of the house along with the use of the existing photograph (Contract Archaeology, Inc., 1971, Plate 8B). The stone foundation and floor plates should be salvaged on the possibility that eventually the entire bathhouse may be reconstructed as an exhibit in another location, and using the wall stones now in the adjacent Treffelt's driveway. Recovery of artifacts will assist in the dating of the construction period of the structure and its various use phases. The cultural material may also contribute to an understanding of the functions of the structure which oral tradition suggests was a "lady's bathhouse".

Excavation Plan

1. Perimeter of Bathhouse. First dig a 3 foot wide trench 8 inches deep around the perimeter (48 feet), a total of 88 square feet. This should reveal pathways under humus layer. This can be dug with sharp, long-handled, and round nosed shovels by horizontal shaving technique approached from a vertical profile (from original test pits of intensive survey). A two foot wide trench approximately 3 feet deep will be dug 6 feet long on each of the 4 sides. This totals 144 square feet. This is to be dug by shovel shaving and use of the trowel to cut through cultural material accumulated against the walls. It will also encounter the slack area in the trench originally cut to erect the foundation wall (builder's trench). Relatively few artifacts may be expected in the builders trench but, since these will be of extreme importance in assigning an origin date to the structure, the builders trench itself should be dug with trowel. The excavated soil should be sifted in a

1/4" wire mesh screen. It will be seen that while 50% of the builder's trench will be excavated, 100% of the old occupational level will be excavated around the periphery of the bathhouse.

2. Pathways. Several occupational levels may be encountered with different pathways indicating the major directions to and from the bath that its habitues traveled. It is hypothesized that a major pathway (deeper and wider than others) will lead to the west where the Auburn House and iron-master's cottage are still to be found at a distance of about 300 feet. A path to the east is also to be anticipated from whence came the servants or "slave women" who according to oral tradition warmed up spring or raceway water in large iron kettles. East is the direction of the worker's cottages. Southeast is the direction of the foundry and conjectured forge. Pathways recognized through the periphery excavation described above can be traced out to a distance of say 50 feet in order to gain a knowledge of the paths' immediate destination and some idea thereby of its ultimate objective. Shallow trenches (2x6'x8") placed very 10 feet on the projected path trajectory could identify the path profile and recover, perhaps cultural debris that had been discarded along the edge of the path.\* Let us anticipate four such paths and require the accurate and relatively speedy method of excavation with the sharp-round-nosed, long-handled shovel. Of course, compared to the total potential length of 4 paths, these 20 shallow trench represents only about one-tenth of one percent of the total distances involved. But perhaps our objective of gaining the direction of the path may be successful. Then too, the structure and cultural content of the paths are believed to be essentially similar for the median situation to be encountered throughout their lengths. (\*Paths estimated at 3 feet wide)

3. Interior of the Bathhouse. The interior of the site's foundation measured about 9' on a side or 81 square feet. One foot below the present surface, under a layer of largely wall rubble, is found the surface, made of flat slate-like rocks. The rubble may be excavated by shovels, but care taken to extract representative samples of wall plaster and other interior features. While it is impractical to screen such fill due to its hard and bulky contents each shovelful should be examined for representative construction material and all other artifact types before being discarded. It is hoped thereby to gain a knowledge of the manner in which the interior walls were constructed, the presence of wall fixtures (hooks?) and the like.

Under the wall rubble relatively compact strata may be encountered of thickness varying from an inch or less to several inches in the corners. These should be carefully excavated with trowels for artifacts that may have been dropped while milady or her daughters were bathing.

When the flagstone floor has been cleared it should be carefully examined for posthole openings for benches, or scotch wear surfaces which might indicate areas of special use. Following this the flagstones can be removed after being numbered so that they can be replaced in their original position.

The subfloor archaeology may give additional information on the original date of the structure through cultural inclusions in the builder's trench or the sub floor surface. It should be excavated with trowels after being cross-trenched.

4. Conjectured Water Pipe. According to oral history water for the bathhouse was gotten through a "6 inch pipe" from the raceway trough directly to the west. If such a pipe still exists it would be revealed by probing a search corridor 12 feet wide leading from the west side of the bathhouse uphill to the raceway trough. A test trench 2 feet wide and the width of the search corridor should dispell the idea of a pipe set under the ground. If cut into the subsoil, some 8 inches deep, it would reveal the discolored trench of a pipe buried however deeply.\* If the pipe were above ground perhaps some valves could be seen either at the raceway or bathhouse end. (\*the pipe trench would be seen as a discolored area)

### Spring

Objectives: The spring pool, measuring 4 by 5 by 1½ feet deep, contains a sandy base, the whole encased in a 6 inch thick cement box. The depth of the sand is unknown, but glass sherds of water containers which broke and sank into the pool liberally litter the surface of the sand. It may be assumed that other fragments of broken jugs and the like are concealed in the sand. Such cultural material will be sought to help date the spring. A "springhouse" is mentioned in the oral tradition about the spring. We intend to further explore its reality. Care must be taken in working at the pond so that the Treffelt goldfish pond which is fed by the spring is not threatened.

Spring Pool. Hand excavation, perhaps with the aid of a snorkel mask, is required to remove the vessel sherds and other cultural material which may be in the sandy bottom. The depth of the material will give a rough correlation to its relative age. Hand tongs, such as used in cooking, may be useful in extending the reach of the human arm. The overflow area of the stream should be examined for densities of sherd fragments and a similar exploring in the bottom sand attempted.

The Conjectured Springhouse. Two features in the vicinity of the spring pool may relate to the conjectured springhouse. The first is a roughly chipped square in the bedrock, which surrounds the pool. The second is a low mound of fieldstone fragments about



8-10 feet in diameter. A plywood cap covered the rectangular cement box enclosing the pool, but on the ground nearby was the wooden wreck of similar rectangular form which may have preceeded the present cap. The square cut into the bedrock could have enclosed the walls of a stone springhouse which was discarded when the spring no longer required a "house" over it. The house not only protected the water from contamination (now accomplished by the wooden cap ), but also secured food put there to keep cool, like milk and butter. Crock sherds then would not be rare in springhouse debris such as we hypothecate. A sample cut into the mound, 2 feet in depth would be required to gain a necessary view of these materials; perhaps one-fifth of the mound would give an adequate sample. The 8-foot square should be carefully exposed and reexamined to see if it is indeed the springhouse perimeter. Perhaps mortar was used and or tiers of the stone walls have left some trace. Additional interviews with the Tresselt's, on whose property the spring is located, should be setup to gain more information on the spring's appearance in the 1930's when Mr. Tresselt went into the goldfish breeding business.

### The Raceway and the Retaining Wall

Behind the spring was a stone wall extending within our sight to a distance of about 12 feet on each side of the spring. At its top in an additional 2 feet of soil was a water channel, a trough about  $2\frac{1}{2}$  feet wide and  $1\frac{1}{2}$  feet deep. The trough could be seen extending for atleast 50 feet running parallel to the wall. This is the raceway which comes from the north and ends up in the Auburn Dam (Check 3). Some 400 feet of the raceway is encompassed in Check 4. Our attention was first called to the raceway in this area by the SHA road maps, including profile maps of the proposed construction which shows a series of retaining walls of stone along the course of the trough.

The Retaining Wall. The retaining wall at the spring is made of fieldstones and is about 7 feet high. It is by far the largest of the retaining walls observed, resembling an aquaduct.

Objective: The excavations of the raceway will determine its shape, size and water carrying capacity as well as the grade drop between known points. These data will be compared with similar studies on the raceway in Check 12 and 17. The basic aim is to understand the water system which powered the furnace bellows, forge hammer, grist mill, saw mill, and provided water for countless lesser purposes including, if we are to believe oral history, the bathing of the ladies in the managerial households of the iron industry. Reservoir of water power for this system was the race pond to be examined in Check 11.

Excavation Plan. Cross-section trenches 2 feet wide and 7 feet in length with a depth of up to 3 feet will be placed through the raceway at appropriate intervals. 6 such trenches excavated by shaving-shovels and trowels will be located at approximately equal intervals along the length of feature to provide representative cross-sections. In addition another cross-section of the raceway

will be required at the location of the Check 4 spring. Here the retaining wall on which the raceway rides is unusually high and the question of the original grade arises. If it is approximately that of the bathhouse-spring level a stone retaining wall on the west side is likely. The raceway at this point is close to existing route U.S. 15. A backhoe will be required to remove the probable fill over the original grade. This is anticipated to be in the neighborhood of 5 feet in thickness. Care will be taken in utilizing the backhoe so as to discontinue its use when cultural material (such as a second facing of stones, is encountered. This trench will probably measure 4 feet wide by 8 feet long and 7 feet deep. The total earth moved will be in the neighborhood of 440 square feet. The troughs average 3 feet in width and 2 feet in height with an additional 8 inches of fieldstone facing in a retaining wall. The raceway at this area would comprise an estimated 2880 square feet of which approximately 4% would be tested in the excavation plan.

#### Summary

The archaeological research on this site is designed to investigate the bathhouse, spring and conjectured springhouse, and raceway and their retaining walls. It will be excavated with a commonly-shared 5 foot grid over the bathhouse and adjacent spring, and with the use of SHA cross-section maps which designate precise locations of the raceway and retaining walls. It is believed that the bathhouse and spring area will provide both structural and artifactual data on the socio-cultural life of the mining population. The raceway and retaining walls will provide data on technology of waterpower utilized in the iron industry.

The scope of the excavations will be as follows:

Bathhouse.- Perimeter - 75% (of the total archaeological  
Paths - 10%\* resources)  
Interior  
and walls - 100% (salvage for possible reconstruction).

Spring Area.  
Pool - 75%  
Conjectured  
Spring- (75% of "foundation" area  
house - 50% 25% of the stone pile)

Raceway and Retaining Walls - 4%.

Site average: 63% of the total archaeological resources.

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\* Excavated area compared to 50 foot radius area of paths at site.

## CHECK 9. LIMESTONE QUARRY (18 FR 325)

### Introduction

Objectives. To mitigate the effect of the impact of the dualization of U.S. route 15 on archaeological resources represented by the limestone quarry, Check 9. The site consists of a quarrying box\*which approaches a limestone outcrop some 2 feet long and 7 feet deep. A 12 foot wide ramp leads into the quarrying box. In addition, a mantle of earth  $1\frac{1}{2}$ -2 feet thick spreads from the quarry 150 feet to the east where it blankets Check 6, burial ground, in part. This earth mantle is filled with chunks of limestone.\*(box is 40'x40')

Excavating Force. 6 local SHA laborers and 3 members of the Consultant's team. Site supervisor: Dr. Kenneth G. Orr. One backhoe will also be used (1 day). Field Time: 4 days.  
(Orr and Orr, 1977, pp.40-43) (Fig 6)

### The Quarry

Objectives. It is known from the 1977 analysis that the limestone at this outcrop was mixed with impurities and in the opinion of the Geologist Dr. Fauth, who worked with the intensive survey, the stone would not be suitable as a flux in the Catoctin Furnaces. It appears to be an abortive quarry of unknown time period, but later than the burial ground Check 6 since it's mantle overlays that site. How much limestone was quarried before the quarry was shut down? What tools were used. What is the time period?

Excavation Plan. The surface of the outcrop will be studied for evidence of tool marks. 2 test pits 3' by 3 feet dug to the base of the quarrying box at the foot of the outcrop will precede 2 trenches 5 feet wide and 20 feet long across the faces of the outcrop. The depth of this trench, determined in the test, will decide whether or not outburden should be removed by a backhoe. Shovel shaving and trowels\*will examine the soil at the base of the outcrop for cultural materials dropped by the miners. The surface at which the mining operations took place will be examined for marks to determine if the excavating method can be determined. Was a machine used? (e.g. similar to the steam shovels used at the Kunkle mine). Also prior to the possible use of a backhoe, a 10 by 5 foot area on the ramp should be cleared to below the humus in search of drag marks to determine how the soil and limestone was taken from the mine (earth scoop and a team of horses?). Shovel shaving on the north and south profiles of the quarrying box should give the site stratigraphy and by exposing the outcrop remnants, if any, suggest the amount of limestone removed before the quarry was abandoned. (\*following use of backhoe to expose culture-bearing soil) (#in the box area, that is, there would be no need for a backhoe on the ramp)

‡ These trenches are located where the west and south faces meet.

### The Debris Mantle

A series of shovel tests 2 feet square and extending into the original surface, a distance of up to 3 feet, will be dug to see if features occur under the mantle. Since the mantle covers the burial ground, Check 6, the efforts of the Check 9 excavators (Consultant's team) will be coordinated with those of the excavators of the burial ground (Team B) in determining the extent of the burial ground.\* The boundary is believed to be as indicated in Fig. , but may extend further to the south. A cross-section of the mantle over 2 burials in Check 6 shows the mantle up to 2 foot in thickness, with gravestones tipped over in a northward direction. An area roughly 80 feet square will be tested with shovel tests at 10 feet apart - approximately 64 tests. The mantle overburden will be completely removed from area containing burials by Team B working at Check 6, burial site.

### Summary

The presumed abortive limestone quarry offers possible information on the techniques and problems of limestone quarrying during an undetermined phase of the Catoclin Furnace. The importance of limestone to the iron industry in providing flux for the furnaces and building stones prompted the quest for the valuable lime and the stone in this case. In addition, debris from the quarrying process in part covers the burial ground Check 6. The excavations will provide information on the first and assistance in the second instance.

The scope of the excavation in terms of total potential archaeological resources is as follows:

The Outcrop. The face and side of the outcrop will be exposed for study excepting 1/6th of it at its base - 83%

Working area at foot of outcrop - 20%

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- Team B will dig to the perimeter of the burial ground indicated by lack of burials. Consultant's team will dig outside periphery of burial ground. The same backhoe will be used alternately directed by the two teams.

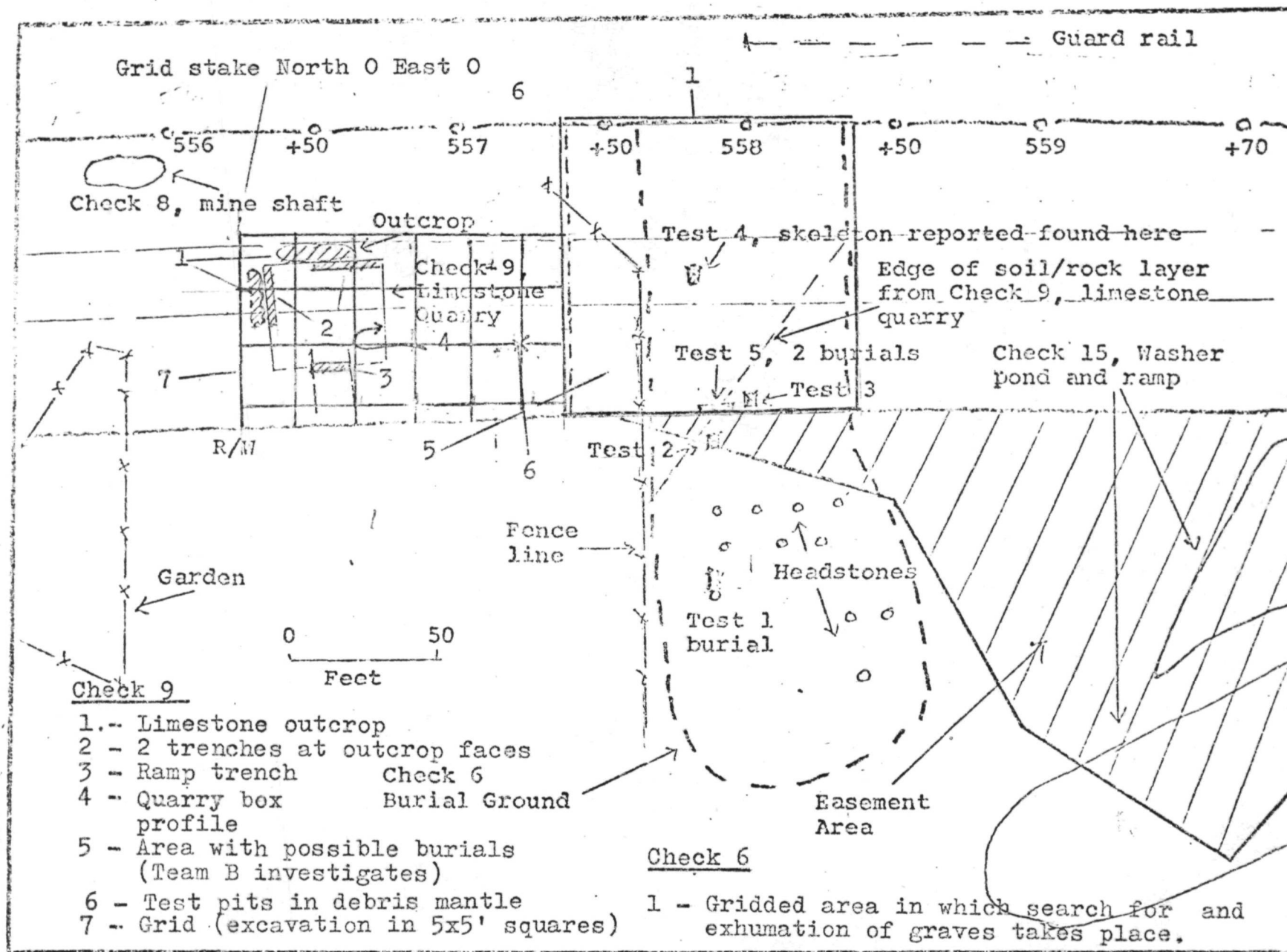


Fig. 6 Ground Plan of Check 6 and Check 9 with proposed excavations.

CHECK 10. EXHUMED CEMETERY  
(18 FR 326)

About 5 years ago the SHA exhumed an estimated 5 to 9 individuals from a burial ground within the right of way of existing U.S. Route 15. The bones were buried in the cemetery of a Lewistown church. A gravestone with the date 1787 was also found. An area 30-40 feet square was excavated with a backhoe and screen. Other burials may have been missed.

Objectives. To thoroughly explore the burial ground area to recover bodies from graves which were possibly missed in the exhumation. The data, it is believed would be comparable to that from Check 6, burial ground.

Excavating Procedures. A topsoil zone of approximately 8 inches will be removed by bull-dozer machine from a 60x60 foot square area encompassing the exhumed burial ground area.\* This should leave the subsoil within which individual graves, both exhumed and untouched can be examined. If a grave area is already exhumed no additional work will be done. If not the grave will be excavated according to the techniques and procedures outlined for Check 6, burial ground.

Excavating Force: 6 local SHA laborers and 3 members from the Consultant's team. One bull-dozer for removal of topsoil. Field time: 2 days. Site supervisor: Dr. Orr.

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\* This following a surface search and pattern probing to make sure that any gravestones present are found prior to bull-dozing top soil.

CHECK 11. RACE POND  
(18 FR 327)

Objectives. The race pond was the major source of water power for the Catoctin Furnace industry. Although it had been reduced to a small pond by the overburdens of existing U.S. 15, the original outline of the pond is recorded in the SHA maps of 1960. Oral history suggests it was originally an ore mine and/or an ore washer pond before becoming a race pond. One rumor, from an excellent source, claims that there was an earlier race pond located an eighth of a mile or so west up the Hunting Creek, and that this race pond powered the early furnace and forge in the Auburn area. Be that as it may, Check 11 race pond powered the water wheels of most of the known iron-working structures and a grist mill. Dimensions of the original pond is a major objective so that estimates of water volume can be made and available power interpolated. (Fig. 7)

We are also interested in attempting to reconstruct a picture of the relative abundance of tree life, the source of charcoal during a large part of the Catoctin Furnace history. A spore profile will be compared with a similar profile from the Auburn dam mucks to see if they were contemporaneous throughout their histories.

Research Procedures.

Borings. The SHA Soils and Foundation section will be requested to provide 10 borings, 5 in each of 2 rows giving 2 cross-sections of the pond as defined by SHA surveyors in 1960. This should check on the form of the pond and provide spores and cultural material in stratified sequence to undertake answering the objectives mentioned above.

Excavations: An excavation of the side of the original pond should be possible on the northwest side of the pond. At this point the overburden of existing Route U.S. 15 is thinnest. Even so, a mantle of several feet in thickness may be expected. This will be removed by a backhoe in digging a trench approximately 5 feet wide and 10 feet long to the base of the pond which may be as much as 7-10 feet below the present surface. This should follow the borings so that the exact magnitude of the task and precise location of the ponds edge will be known.

A trench will also be placed through the raceway trough near where it joins the ponds. The mouth of the pond is actually under existing Route U.S. 15 and the nearest part of the raceway available for excavation is actually within Check 12 area. Here a deep (8') and wide (10') ditch serves as the raceway. The situation here is not simple, however, since Lancelot Jacques, owner of the property in the 1920's, dammed-up nearby Check 12, Feature 2 (iron mine) converting it into a "deer park lake" with water from the race pond.

A trench 3 feet wide and 20 feet long can explore the stratigraphy of each bank of the trough as well as its base.\* This can be done by the controlled use of a backhoe. (\*across the trough, north-south)

Some 25 feet northwest of the northwest bank of the original pond outline is a thicket of young trees. 5 pits 3 feet wide and extending to subsoil 2-3 feet deep are required to explore the possibility of features associated with the race pond in this area (e.g. ore washing equipment mentioned in oral histories).

Source of water. The source of water of the race pond is said by oral tradition to be "strong springs". The intake channel with its large gate valve at the Little Hunting Creek was built by Jacques in the 1920's. An outlet ditch was built in the 1930's by George English to harvest goldfish raised in the pond. Springs must be still operating since the intake channel has fallen into disuse. Our investigations will check on these ascertations by continued surface examinations and additional oral history interviews.

Research Force. 6 local SHA laborers and 3 members from the Consultant's team. One bull-dozer for excavating the trenches.\* The following outside specialists will participate: Dr. John L. Fauth, SUNY/Cortland will advise on the geological aspects of the research (possible iron mine originally, and iron washer pond), a botanist selected with his help will analyse the spore content of the borings from this pond and from the Auburn Dam. Supervisor-Dr. Orr. Time: excavating crew - 6 days; Fauth -3 days, Botanist -3 days)

Summary. Research on this site will investigate the various uses of the pond, its shape and capacity when serving as the major source of water power for the Catocin Furnace activities. and the flora record (spores) during its various uses up to the present time. It is believed that the research design is adequate to answer the research questions directed at the race pond. Since only about 100 square feet area will be excavated and the pond is 15,000 square feet in extent the scope is .6% of the total archaeological resources. However, a relatively small proportion of the pond can provide complete answers to many questions (spore profiles, iron-industry uses from dropping or deposits, cultural time periods of stratigraphy).

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\* While the upper portion of the trench will be above the water, a sump pump may be needed a few feet below the old surface, since part of the old pond still contains water (at the west end).



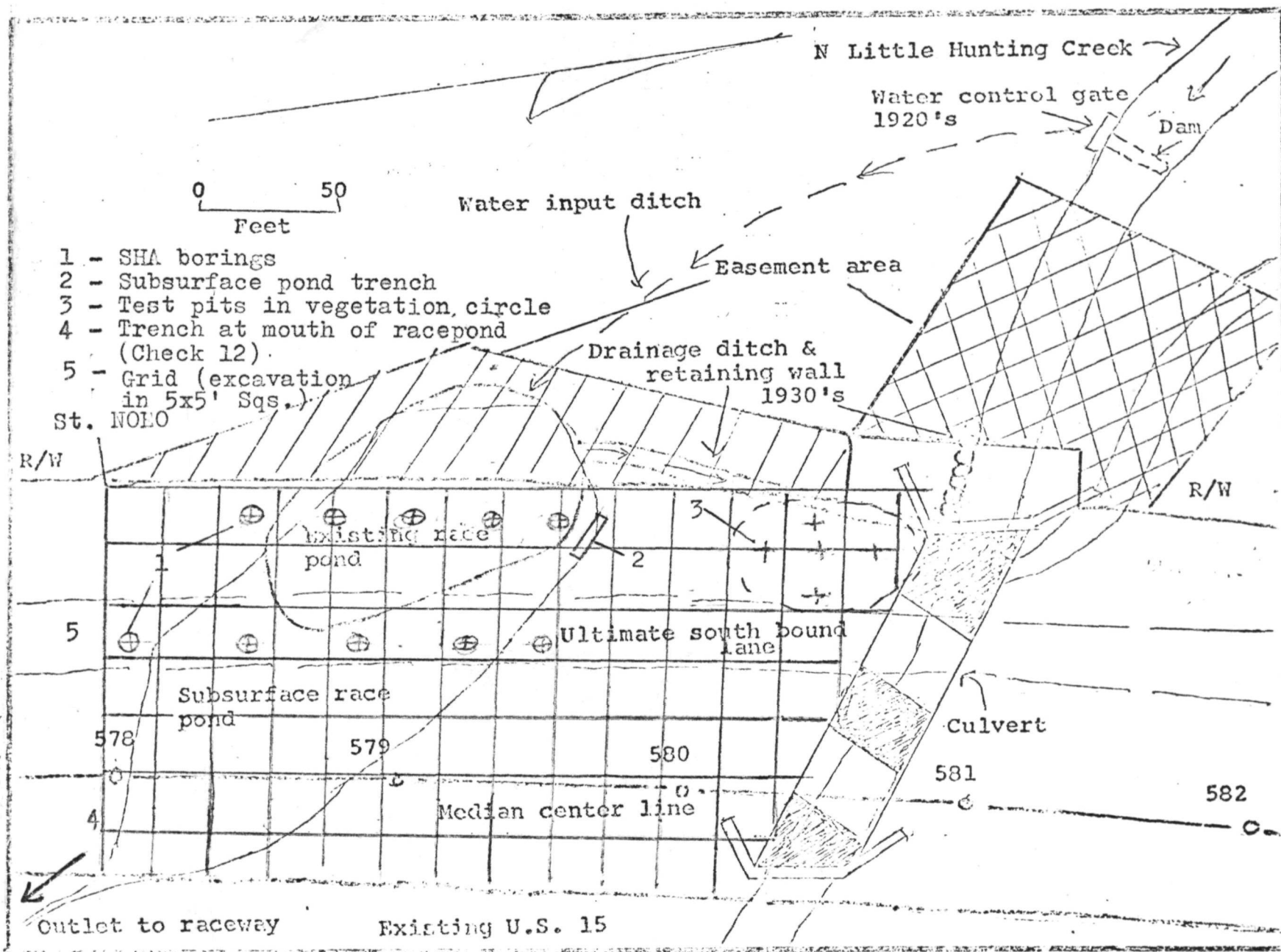


Fig. 7 Ground Plan of Check 11 with proposed excavations and borings.

## CHECK 12. IRON ORE MINES (18 FR 328)

### Introduction

Check 12 originally consisted of 4 features, all iron ore mines. Feature 3 is now outside the intended area of construction for Alignment 1 as is the east half of Feature 2, and the west area of Feature 1. We will be concerned with the remainder of Feature 1 and 2, both "shallow" iron ore mines, and Feature 4, "deep" iron ore mine. The shallow mines can be reached by backhoes the iron ore deposits being both above the present surface and up to 5 feet below. The deep mines (Check 12, Feature 4 and Check 13, the Ore Bank Pond and not within the present study) extend below the present water table 20 feet or more. We know that the deep mine, Check 13, the Ore Bank Pond was in operation in 1903 at which time its pumps were shut down and it flooded. Check 12, Feature 4 deep mine was undoubtedly also in the late period of iron-working at Catoctin since steam pumps would have been necessary to operate it. The shallow mines of Check 12, Feature 1 and 2, however, could be operated without pumping equipment above the water table. Iron deposits below the water table were not mined. They are therefore believed to be in the early or middle period of iron-working development at Catoctin. (Orr and Orr, 1977, pp. 50-60) (Fig. 8)

### Feature 1. Shallow Iron Mine

Objectives. A paradigm to explain how iron ore was mined in the shallow mines (early - middle time period) is being sought. We know from photographs and artifacts as well as oral history accounts that late period mining not only had steam pumps to allow mining below the water table, but also ore carts which were pulled by mules and rode on iron rails. The Kunkle mine operation of the 1911 period (after the Catoctin furnaces ceased to operate) had steam shovels and probably steam engines for moving the ore carts. How were the early mines dug? The later mines were worked in bunkers with the miners spading the ore down through a chute (carved in the natural clay strata) into the ore cart (Contract Archaeology Inc. 1971, Plate 4A). Squared areas resembling bunkers were seen in the Feature 1 mine area. These are now out of the area of construction for the new alignment. However, Feature 1 has a concave surface containing iron strata which had obviously been removed. It also had a thick sand fill covering the worked surface and a road consisting of stratified iron ore and clay particles in thin lines. (Orr and Orr 1977, Fig. 19). This road, set high in the sand fill obviously was used after the ore at the point of the excavation had been removed at a lower level and the excavations passed on further into the "rabbit warren" mine. The following excavation plan is suggested by the emerging model of the mining plan.

Excavation Plan. It is planned to return to the area of excavation of the intensive survey - designated Feature 1, Test 1. A trench 3 feet wide will be extended, at the west end of the original excavation, to the north. This will cut through Fills 1 and 2 and lay bare the strata in the hillock directly to the north. This will in effect give us a complete profile as dug by the Catoctin miners as they entered the Feature 1 mine. Care will be taken to examine the surface of Fill 2, the drag road, for marks indicating the type of traction used to transport the mined ore. The alternate sandy and clayey bands of Fill 2 should be troweled out, but Fill 1 can be removed by backhoe. Evidence of a lower road should be sought at the base of the trench extending to the north hillock. At this point, 6 feet below the present surface, the water table commences. Large iron nodules found here were undoubtedly apparent to the miners but excavation does not seem to have proceeded below this point. The ore Strata on the north hillock will be compared with those on the south.

A ten foot wide trench may now be pushed to the west with the help of the backhoe. Care should be taken that the slanting surfaces of the mine, dug by the miners and now covered with sandy soil backfill from the top 6 feet of the natural stratigraphy, is troweled clean to show spade marks and devices perhaps cut into the strata in loading the carts (shutes?). The additional 10 feet of Fill 2, road, should be excavated by shovel according to the horizontal bands composing it. Firstly, the present humus will be removed to reveal whatever marks of traction can be discovered.

The same procedure should be followed with backhoe and excavating tools to lay bare comparable strata, fill and road strata at Test 2 and Test 3 areas located in the south and west peripheries of Feature 1 ore mine. These 2 trenches should be 3 feet wide and 20 feet long. The trenches may be fanned out to 5 feet in width to explore the basic cut further if required, and if additional roads are discovered a series of 2 foot square test pits extending through the humus layer to the roads should be attempted in search of the direction of the roads (say 20 pits).

#### Feature 2, Shallow Iron Ore Mine

Objectives. This iron mine is identified to date by the SHA cross-section map of 1960 which drew the outline of the mines profile prior to the construction of the existing U.S. Route 15. The objectives for Feature 2 are the same as those of Feature 1 - to understand the system of early-middle period mining. The data will be compared with that of Feature 1.

Excavation Plan. It is proposed that a line of trenches be excavated by backhoe with supplementary shovel and trowel work as required for details similar to those outlined above for Feature 1.

The trenches 5 feet in width will connect the west ends of 2 hillocks at the south of the mine and within the right of way of the ultimate North Bound Lane (Fig. ). Two larger trenches extending 15 feet in length will explore the stratigraphy and mining evidence on the two hillocks. Four trenches each 10 feet long will be equally spaced between the 2 hillocks, a distance of 115 feet. The trenches will extend to the base of the mine (6-10 feet below the present surface) in search of roads and evidence of mining techniques and cultural material.

#### Feature 4. Deep Iron Ore Mine

Objectives. This mine is now under the existing Route U.S. 15. It was identified and described by Singewald, 1911 (p.199) and the SHA cross-section map of 1960 mentioned above. Are the iron ore strata the same as those for the other mines? What can be learned of ore mining techniques and the cultural material associated with the period of the mine? The depth of the feature precludes excavating to get these answers, but some data may be gained in borings.

Research Plan. It is recommended that 10 borings located with the assistance of geologist Dr. Fauth, who will analyze the findings, be placed over the buried mine, which measures 300 feet in length by 125 feet in width and is from 15 to 30 feet in depth. The borings will also explore the geological problem of the origin of the iron mines thus making explicit the reason why the Catoctin Furnace was located here in the first place. An understanding of the iron ore as an environmental factor may also explain why the ore mines were discontinued. Were the iron sources exhausted in this area, as is sometimes suggested, or were the miners unable to find or exploit the known sources?

#### Feature 5. Raceway

This feature will be excavated and analysed with Check 11 race pond features with which it belongs.

#### Feature 6. The Charcoal Road

Objectives. The Charcoal Road erroneously shown striking northwest across Check 12, iron ore mine, was correctly located extending due west from the furnace area to the south of the present Catoctin Hollow road. This was accomplished through oral history research and SHA maps of the 1960 period. We are concerned with specifics about the road. How was it made and what are its characteristics. The road is reported to be the route of charcoal made on the mountain and shipped by wagon to fuel the blast furnaces in the early and middle periods of iron-making at Catoctin. The road rests on a large slag pile which forms the plateau behind the retaining wall at the Catoctin furnaces area. The slag plateau (Feature 6A) is

a feature in part atleast of the late period since it fills-in behind the retaining wall which encompasses and accommodates the blast Furnace Deborah (Stack 3). The current Charcoal road then is in part late. Are there earlier charcoal roads at the base of the 10-15 foot thick slag strata?

Research Plan. Two trenches 10 feet wide, 3 feet deep and 18 feet in length will be placed across the road. One trench will be put across the old road on the east side of the existing U.S. route 15. The other trench will be put in on the west side of the road in the section shown by 2 foot contours on the recently completed Catoctin Site map (Division of Archaeology, State Geological Survey). A 3 feet wide vertical trench giving a profile of the road, the slag fill and the original land level will be cut with backhoe into the east section of the road. This will bequire a trench approximately 15 feet in extent.

#### Research Force

6 local SHA laborers and 3 members from the Consultant's team will operate with a backhoe at Features 1, 2, and 6. Dr. Fauth, geologist will advise on the geological aspects of the research as outlined above and will in addition carry on geological research relating the Catoctin Furnace iron-making activities to the mineralogical setting in which they took place. An additional 10 borings provided by the SHA Soils and Foundations Department will be required within Check 12 to pursue specifically geological problems which taken with the archaeological borings described above will give the necessary data for correlating archaeological and geological findings. Supervisor-Dr.Orr.

Time: Excavating crew - 12 days. SHA backhoe - 12 days.  
Dr. Fauth - 12 days.

#### Summary

Check 12, iron ore mines and Charcoal Road concentrates attention on the basic ingredients of the blast furnace during the greater part of iron-working sequence at Catoctin Furnace. The research approach combines geology and archaeology in an effort to fathom the socio-cultural problems and procedures of man within a specific framework of natural resources. The scope of the research is believed adequate to the problem of mitigating the effect of the impact of Alignment 1 on the archaeological resources. Although the percentiles may appear small it must be remembered that the data sought is repetitive and a relatively small sample is sufficient to answer the research questions. The proportions of anticipated excavation to available archaeological resources are as follows:

Feature 1, shallow iron ore mine	- 10%
Feature 2, shallow iron ore mine	- 2%
Feature 4, deep iron ore mine (borings only)	- .003%
Feature 6, charcoal road	- 10%

## CHECK 15. ORE RAILROAD (18 FR 329)

### Introduction

The original Check 15 of the intensive survey (Orr and Orr, 1977, pp. 60-73) included most of the washer pond and ramp where ore from the Check 13, Big Ore Bank, was washed and transported to Deborah Furnace, Stack, - features of the late period in the development sequence at Catoctin Furnace. When the dualized road system was brought close together in the area of Check 15 only a small part of the original check area remained within the area of construction. The surviving area, measuring 250 by 25 feet, contains the outlet stream from the flooded Big Ore Bank mine (Check 13), a portion of the ore railroad area and an abandoned ore cart lying on its side in the stream. (Figs. 9, 10)

### Objectives

The basic objective is to get as much information about the ore transportation system during the late period at Catoctin Furnace as possible within the confines of the present right of way.

### Excavation Plan

A 5-foot grid will be put over the area. The abandoned cart will be excavated and the stream bed searched for additional mining equipment. The stream itself is the product of the water pumping activity at the Big Ore mine which allowed the iron ore deposits below the water table to be mined. According to oral history George Holt, the night pumper, stopped the pumps "on a Sunday evening" in 1903. The miners, in sympathy with this because of poor pay, left their picks and shovels in the mine - "everything was left down there", and pushed over the ore carts on the rails. In our excavation care will be taken to investigate the possibility that iron ore was in the abandoned ore cart. Log cribbing reported by Charles Sandy, Cunningham Falls State Park superintendent will be investigated and if found sufficient excavation to expose this apparently retaining wall device undertaken. Two trenches 5 feet wide and 2 feet deep extending a length of 8 feet will be dug following a test pitting of the area in search of the rails and/or path of the railroad (30, 2 foot-square pits extending 2 feet to the subsoil).

### Scope

The planned excavation will cover approximately 12% of the area of potential archaeological resources within the construction area.

### Excavating Force

Six local SHA laborers and 3 members of the Consultant's team will undertake the excavation. Heavy equipment will be needed to raise the ore cart from the stream bed and transport it to the laboratory where preservation measures can begin  
Time: 5 days. Supervisor: Dr. Orr.

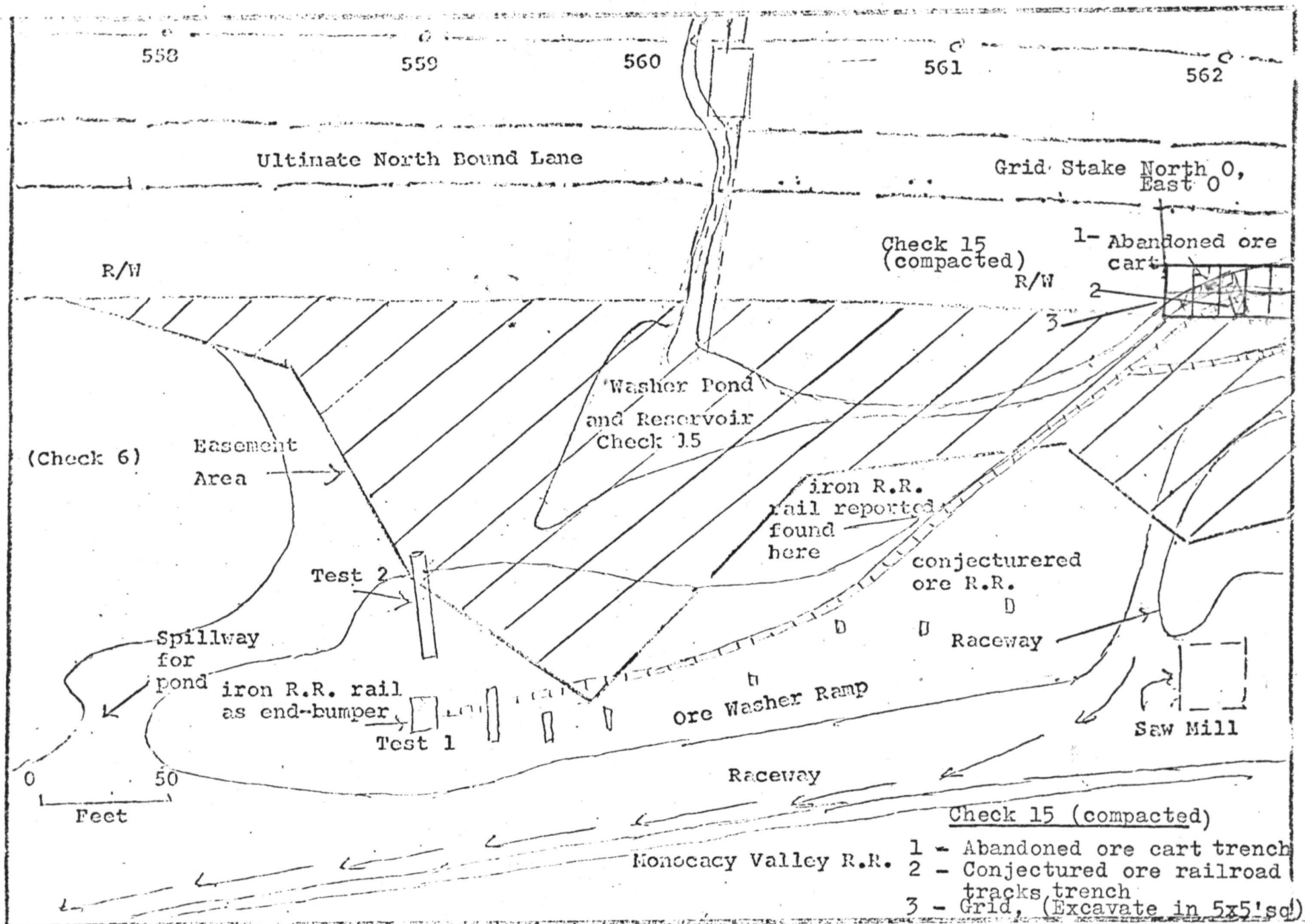


Fig. 9 . Ground Plan of Check 15, including Check 15 (compacted) and excavation plan.



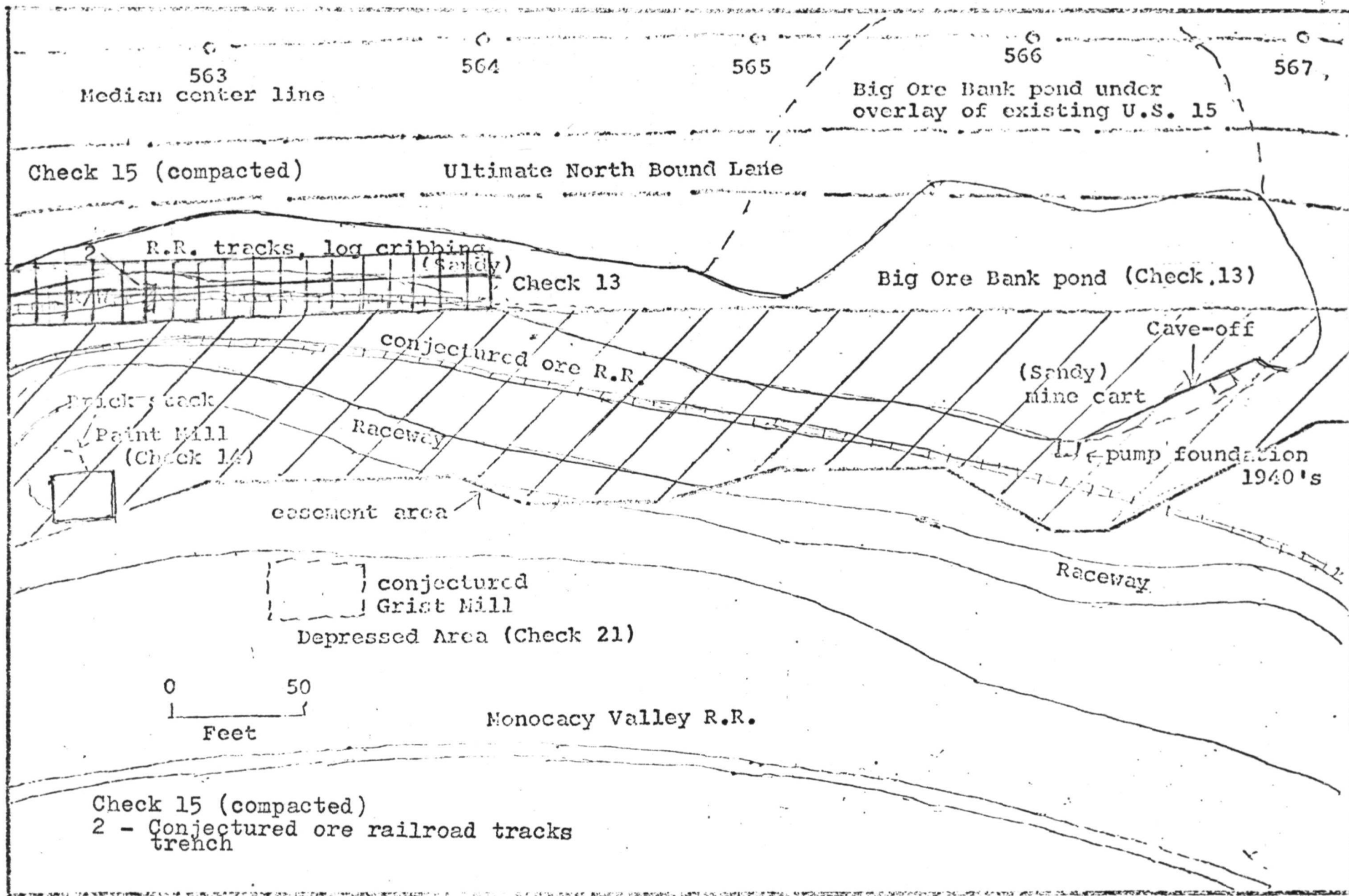


Fig. 10 . Ground Plan of Checks 13, 14, 21 and part of Check 15 (compacted) with excavation plan.



## CHECK 17. RACEWAY (18 FR 331)

### Introduction

Approximately 150 feet of raceway, a ditch reinforced in part by a stonewall, occurs in this check area. The raceway comes from the north as part of the system starting in the race pond, Check 11, and ends up in the Auburn Dam, Check 3. The raceway in this area takes a sharp turn from a north-south orientation to a southwest direction as it heads toward Check 4, bathhouse and spring and the Auburn dam. The point at which this turn takes place is also the conjectured site of the original furnace according to William Renner who observed "casting house earth layers" in an excavation behind his son-in-laws house. The raceway has an exceptionally large diameter (4-5 feet) at this point and for several hundred feet to the north. The diameter of the raceway within the construction area of Check 17 is about 2 feet. While the conjectured original furnace is outside the area of construction and not liable to excavation at this time, the data is germane to the understanding of the raceway and will form part of our study. (Fig. 11)

### Objectives

The objective of the excavations is to understand the form and function of the raceway in the check area. These data will be compared with similar data gathered at other raceway features (Checks 3, 4, 11-12. The grade and volume of the raceway will be ascertained. In addition efforts will be made to identify maintenance paths which may be on one or both sides.

### Excavation Plan

Two trenches 5 feet wide, 15 feet long, and 2 feet deep\* will be dug at appropriate intervals. The profile exposed by the culvert ditch at the south end will be shaved to give an additional cross-section. The retaining wall will be excavated so as to reveal the builders trench into which the stones were fitted. The trench should be troweled for possible cultural material. The earth and stone base (?) of the trough should be similarly excavated by trowel and shaving-shovel in search of cultural material to aid in dating. Evidence of maintenance pathways may be seen under the accumulated humus on one or both sides. The raceway will be mapped to check on SHA 1960 maps on which it occurs. The large-bore raceway associated with the conjectured original furnace site will be examined as to surface configurations and materials and dimensions.

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\* This is an average. It will be dug to subsoil through the raceway trough.

### Excavation Force

Six local SHA laborers and 3 members of the Consultant's team will undertake the excavation. Time: 4 days. Supervisor-Dr. Orr

### Scope

The excavations will total approximately 10% of the total area of potential archaeological resources.

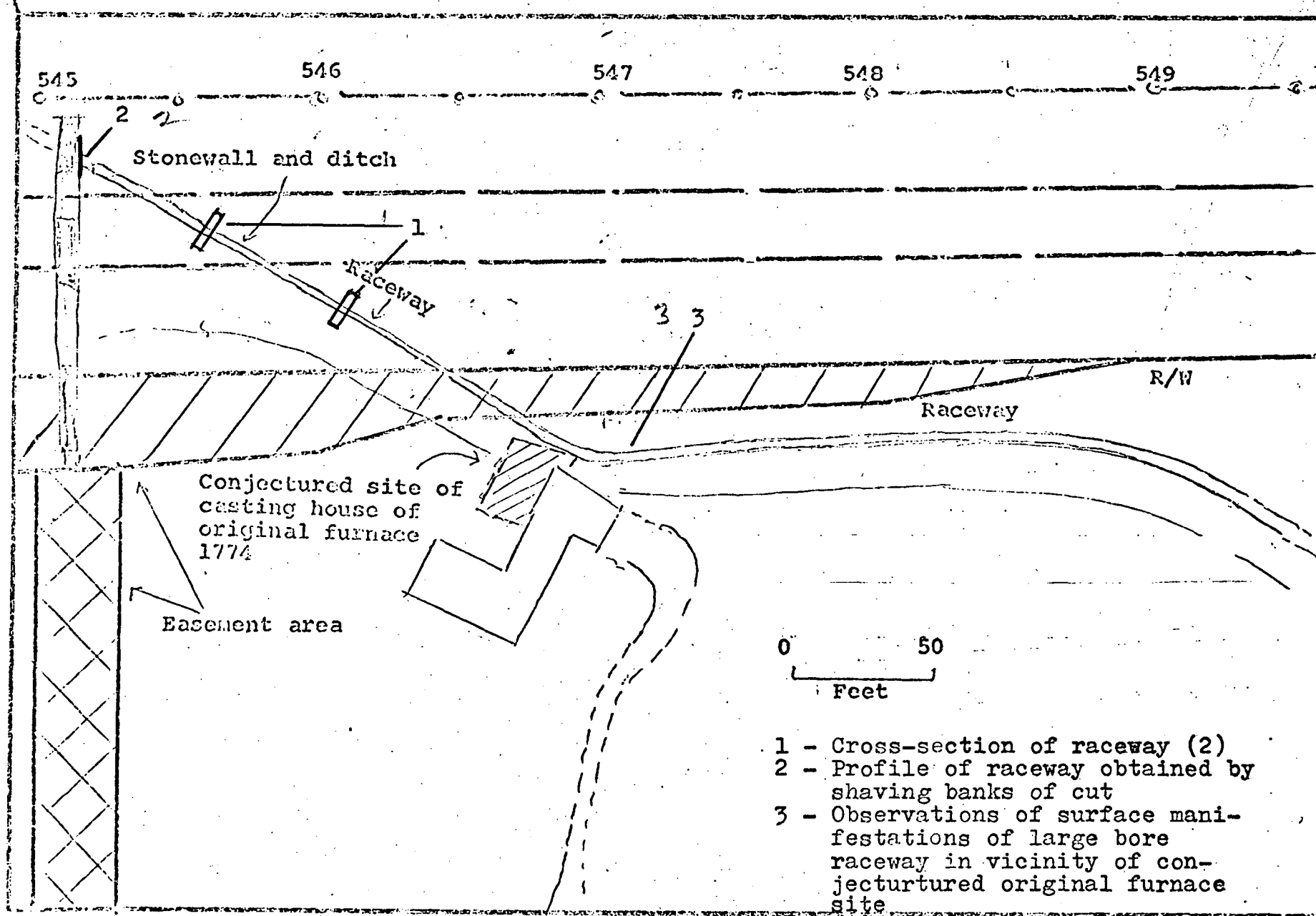


Fig.11 . Check 17 and proposed excavation plans.

## CHECK 19. LIMESTONE QUARRY AND KILN (18 FR 332)

### Introduction

This site is located 7200 feet south of Check 3, the southern extension of Catoctin Furnace area. The quarry may have provided building material (stones and mortar) for the Catoctin Furnace complex since it appears to be contemporaneous in time with at least part of the sequence. The kiln ruin is nearby. (Fig. 12)

### Objectives

The objectives of this excavation is to provide information on the technology of limestone utilization and quarrying such as was employed by the Catoctin Furnace community.

### Excavation Plan

It is planned to excavate a 10 by 10 feet area at the face of the limestone outcrop within the quarry. The area will be tested for depth and stratification with a 3 foot square test pit prior to excavation with the use of a backhoe. The intension is to expose the use surfaces in order to see what may be deduced from drag marks as well as to search for cultural material including workmen's personal accoutrement (glass containers, coins, etc.) as well as tools. The face of the quarry will be studied for tool marks indicating method of quarrying. Trowels and shovels will be used on the surfaces and in connection with culture-bearing strata.

The kiln will be excavated by two 2 foot wide cross-trenches, each measuring c. 14' x 27', in which cultural accretions against the wall and builder's trench will be sought. This will be dug by shaving shovels and trowels. The cross-trenches will meet in the center of the structure to determine features and materials in association with the limestone roasting process.

### Excavating Force.

6 local SHA laborers and 3 members from the Consultant's team will operate with the help of a backhoe on the quarry feature. Dr. Fauth, geologist, will advise on the quality and possible purposes of the limestone. Supervisor: Dr. Orr.

Time: 3 days.

### Scope

An estimated 30% of the archaeological resources will be excavated.

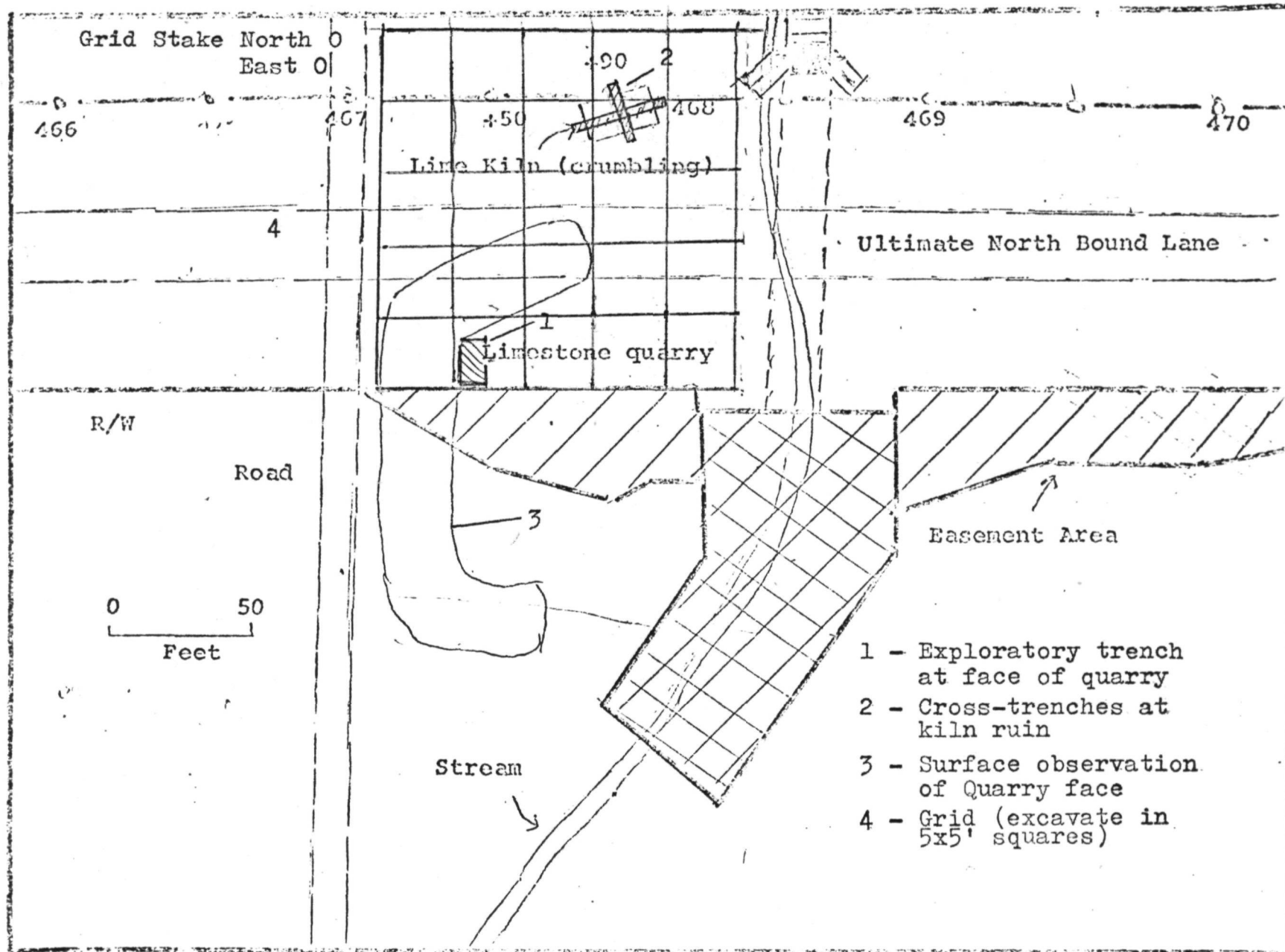


Fig. 12 . Ground Plan of Check 19 and Excavation Plans.

## References

Contrace Archaeology, Inc. (J. Glen Little and Stephen Israel)

- 1971 An Historical and Archaeological Survey of Land affected by the Dualization of U.S. Route 15 at the Catoctin Iron Furnace. Report prepared for the Maryland State Highway Administration. Alexandria, Va.

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- 1977 An Intensive Archaeological Survey of Alignment 1 Corridor, U.S. Route 15 from Putman Road to Maryland Route 77 in Frederick County, Maryland. Prepared for Maryland Department of Transportation State Highway Administration, Baltimore, Maryland. Fredericksburg, Va.

Orr, Kenneth G.

- 1979 Technical Proposal, Catoctin Furnace Archaeological Services, U.S. Route 15, Frederick County, Md. Prepared for Bureau of Consultant Services, Maryland State Highway Administration, Baltimore, Maryland.
- 1979 Cost Proposal, Catoctin Furnace, Archaeological Services, U.S. Route 15, Frederick County, Md. Prepared for Bureau of Consultant Services, Maryland State Highway Administration, Baltimore, Maryland

APPENDIX A

Archaeological Forms to be Used  
in  
Catoctin Furnace Archaeological Mitigation Project

# INVENTORY FORM

(For check-listing features, burials, photographs, artifacts, etc.)

[illegible]



ARCHEOLOGICAL SPECIMEN CATALOG  
Division of Archeology, Maryland Geological Survey

Site number:

Name of site:

County:

Lot  
NumberProvenienceDescription (and old number)Date  
CollectedCollector  
and/or  
Donor

# ARCHEOLOGICAL FEATURE FORM

Site number

Feature number

Definition (general shape and appearance)

Screened?

Size of mesh used

Horizontal location in site

Depth of top below surface of ground

; below datum

Depth of bottom below surface of ground

; below datum

Maximum length

, direction

; maximum width

, direction

Vertical thickness or depth

Stratigraphic position

Association with other features

Nature of fill

Lining

Secondary features

Associated artifacts

Associations among elements

Interpretative comments

Photographs

Draw plans and profiles on cross section paper; record burials on addendum.

Excavated by

Dates

through

Recorded by

Date

# ARCHEOLOGICAL EXCAVATION UNIT REPORT Division of Archeology, Maryland Geological Survey

**LAYER      LEVEL      SQUARE      (circle nature of unit to be described )      Site number:**

**Unit number:** level/layer **square**

**Screened?** **Size of mesh used**

**Horizontal dimensions of unit**

**Vertical dimensions of unit**

**Nature of floor (sketch below)**

**Nature of walls (record profiles on separate sheet of cross section paper)**

**Features found in unit (position and number; describe on feature forms)**

**Artifacts recovered**

**Floor plan: (record depths at each corner):**

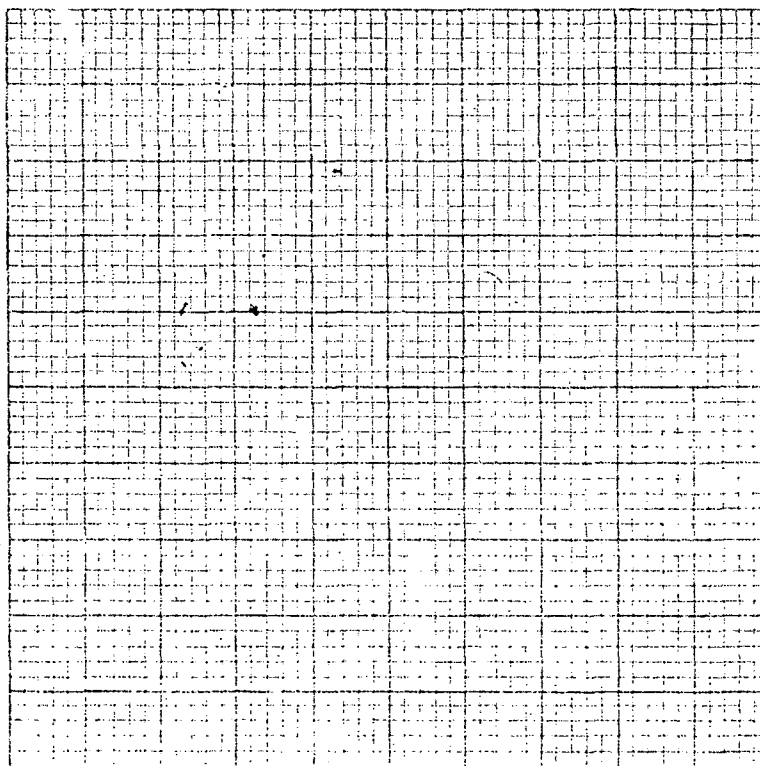
**Depth below surface**

**Depth below surface**

**Depth below datum**

**Depth below datum**

**Scale:**



**draw directional  
arrow above**

**Depth below surface**

**Depth below surface**

**Depth below datum**

**Depth below datum**

**Interpretative comments**

**References to additional notes, drawings or photos**

**Excavated by**

**Dates**

**through**

**Recorded by**

**Date**

## PHOTOGRAPHIC RECORD

Film \_\_\_\_\_ ASA \_\_\_\_\_ Lens \_\_\_\_\_ Project \_\_\_\_\_

Roll No. \_\_\_\_\_ Photographer \_\_\_\_\_

[illegible]

# BURIAL ADDENDUM TO FEATURE FORM

Site number \_\_\_\_\_ Feature number \_\_\_\_\_ Burial number \_\_\_\_\_  
 Number of individuals \_\_\_\_\_ Sex: male \_\_\_\_\_, female \_\_\_\_\_, indeterminate \_\_\_\_\_  
 Age group: infant \_\_\_\_\_, child \_\_\_\_\_, juvenile \_\_\_\_\_, adult \_\_\_\_\_, senile \_\_\_\_\_, unknown \_\_\_\_\_  
 Grave type: surface \_\_\_\_\_, pit \_\_\_\_\_, cist \_\_\_\_\_, other \_\_\_\_\_  
 Burial type: extended \_\_\_\_\_, semi-extended \_\_\_\_\_, flexed \_\_\_\_\_, semi-flexed \_\_\_\_\_, bundle \_\_\_\_\_,  
 disarticulated elements \_\_\_\_\_, disarticulated mass (ossuary) \_\_\_\_\_,  
 cremation in situ \_\_\_\_\_, redeposited cremation \_\_\_\_\_, partial cremation in situ \_\_\_\_\_,  
 redeposited partial cremation \_\_\_\_\_, other \_\_\_\_\_  
 Body orientation: prone \_\_\_\_\_, supine \_\_\_\_\_, left side up \_\_\_\_\_, right side up \_\_\_\_\_,  
 sitting \_\_\_\_\_, direction from skull to sacrum \_\_\_\_\_, head to \_\_\_\_\_,  
 face to \_\_\_\_\_, arms \_\_\_\_\_, legs \_\_\_\_\_  
 Highest point on burial:  
 depth below top of pit \_\_\_\_\_, below surface \_\_\_\_\_, below datum \_\_\_\_\_  
 Lowest point on burial:  
 depth below top of pit \_\_\_\_\_, below surface \_\_\_\_\_, below datum \_\_\_\_\_  
 Depth of top of skull below top of pit \_\_\_\_\_, below surface \_\_\_\_\_, below datum \_\_\_\_\_  
 Depth of top of pelvis below top of pit \_\_\_\_\_, below surface \_\_\_\_\_, below datum \_\_\_\_\_  
 Maximum length of burial \_\_\_\_\_, direction \_\_\_\_\_  
 Maximum width of burial \_\_\_\_\_, direction \_\_\_\_\_  
 Bones absent/present \_\_\_\_\_

Associations among individuals

Stratigraphic position (inclusive, intrusive, disturbed)

Associations with other features

Associations among elements

Interpretative comments

Photographs

Sketch burial on cross section paper.

Exposed by

Dates

through

Recorded by

Date